

NPP Post Launch Activation Plans for CrIS (Level 1b)

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NPP Launch 10/28/11

47 Engineers/scientists from 9 Organizations Participating in CrIS CAL/VAL Effort

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Key Milestones Associated with CrIS Activation

Phase 1.....setup

- > Launch (**Oct 28**)
- > Turn ON (**Nov 8**)
- > Outgas complete (**Dec 9**)
- > All electronics activated (**Dec 11**)
- > Interferometer & signal processor optimization complete (**Dec 20**)
- > Calibration Table Upload - Engineering Packet #32 (**Dec 23**)
- > Begin normal mode IR data collection for noise assessment (**Dec 24**)
- > Vibration isolation system release – Go/No-Go (**Jan 8**)

Key Milestones Associated with CrIS Activation

Phase 2.....spectral/radiometric calibration tuning

- > Collect normal mode data for spectral calibration (**Jan 9**)
- > Collect diagnostic mode data for linearity calibration (**Jan 10**)
- > Begin CAL/VAL team review of latest calibration coefficients (**Jan 26**)
- > Final Calibration Table Upload - Engineering Packet #33 (**Feb 9**)

**RDRs & SDRs Available for Distribution
February 10, 2012**

CrIS Activation Details

Phase 1 Activation

CAL/VAL Task	Responsibility							
	Exelis	MIT LL	UW	SDL	UMBC	NOAA STAR	Raytheon	NGAS
Optimize Interferometer (metrology, DA tilt, ZPD center)	x	x		x				
IR Channel Gain Check and Adjustment	x	x			x			
Bit trim & Impulse noise checks	x				x			
NEdN performance and trending	x	x	x	x				
Correlated noise characterization (spectral)	x	x	x	x				
Vibration isolation system assessment (lock or release)	x	x						
Ice contamination analysis	x				x			
Tune SSM baffle temperature profile	x							
Update CrIS LOS angles for geolocation	x							
Engineering packet #32	x	x	x	x	x		x	x

Phase 2 Activation

CAL/VAL Task	Responsibility							
	Exelis	MIT LL	UW	SDL	UMBC	NOAA STAR	Raytheon	NGAS
Set Neon lamp calibration intervals	x					x		
Spectral Calibration (neon bulb & ILS parameter update)	x	x	x		x			
Linearity characterization/correction	x		x					
Engineering packet #33	x		x		x		x	x

CrIS Activities During Level 1b Intensive CAL/VAL

~ 6 month duration beginning February 10, 2012

CrIS Intensive CAL/VAL Quality Control Checks

CAL/VAL Task	Responsibility							
	Exelis	MIT LL	UW	SDL	UMBC	NOAA STAR	Raytheon	NGAS
CrIS responsivity and sensitivity trending	x	x						
CrIS spike analysis (SEU trending)				x				
Ice contamination analysis	x			x				
CrIS RDR & SDR trending & monitoring						x		
Spatial correlations caused by calibration averaging		x						
Spectral correction & resampling consistency checks			x					
Operational SDR algorithm updates						x	x	x
Experimental SDR algorithm updates	x	x	x	x		x		

CrIS Intensive CAL/VAL Activity

Begins February 10, 2012

CAL/VAL Task	Responsibility							
	Exelis	MIT LL	UW	SDL	UMBC	NOAA STAR	Raytheon	NGAS
NEdN performance and trending	X	X	X	X				
Correlated noise characterization (spectral)	X	X	X	X		X		
Spectral Calibration (neon bulb & ILS parameter)	X	X	X		X			
ILS correction with structured Earth scenes			X					
Artifact analysis via PCA				X				
Linearity characterization/correction	X		X					
Geolocation	X				X			
ICT radiance model check	X		X	X	X			
CrIS residual analysis (clear sky vs. calculated)			X			X	X	
CrIS double difference comparison with IASI & AIRS						X		
CrIS SNO comparison with AISA & AIRS				X		X	X	
Error budget assessment (in-orbit RU estimation)	X		X					
Broadband radiance compare with GOES & other				X				
Spatial integration of CrIS and ATMS		X						
Monitor short-term and long-term repeatability		X						
Consistency checks on radiometric calibration				X				
CrIS VIIRS radiance comparisons				X				
Engineering packet #34	X	X	X	X	X		X	X

Engineering Packet Parameter	Number of Parameter Values	Engineering Packet Updates			
		v31	v32	v33	v34
		Launch	L + 56 Dec 23, 2011	L + 104 Feb 9, 2012	Int CAL/VAL July 2012
Spectral Calibration					
Neon wavelength	3		x	x	optional
ILS Correction					
FOV position relative to FOV 5	27 x 2		x		
FOV 5 position	3 x 2		x	x	
ILS FOV size	27		x		
ILS fit parameters	27 x 5 x 3		x		
Radiometric Calibration					
ICT emissivity (LW + MW +SW)	713 + 433 + 159		x		
Polarization change (not used)	287				
ICT environment model	22				
Scan baffle temp correction	22			x	optional
Science telemetry coefficients	33				
Science telemetry limits	13				
Nonlinearity Correction					
Vinst	27		x		optional
a2	27			x	optional
Modulation efficiency	27				
PGA gain commanded (0 - 15)	27		x		optional
PGA hex to gain values	3 x 16				
FIR filter gain relative to FM1	3				
Geolocation					
Crosstrack scan angles	31		x		optional
Intrack scan angle	31		x		optional
Cube alignments (CrIS Internal)	8				
Cube alignments (CrIS to S/C)	3		x		x
Time stamp bias	1				

Need CAL/VAL
Team
Agreement prior
to 12/12/11